CPC   COOPERATIVE PATENT CLASSIFICATION

G06N   COMPUTER SYSTEMS BASED ON SPECIFIC COMPUTATIONAL MODELS

G06N 3/00   **Computer systems based on biological models** (analogue computers simulating functional aspects of living beings G06G 7/60)

G06N 3/002   .   { Biomolecular computers, i.e. using biomolecules, proteins, cells (using DNA G06N 3/123; using neurons G06N 3/061)}

G06N 3/004   .   { Artificial life, i.e. computers simulating life}

G06N 3/006   . .   { based on simulated virtual individual or collective life forms , e.g. single "avatar", social simulations, virtual worlds (computer games A63F 13/00; medical simulations G06F 19/00; information retrieval G06F 17/30873; image processing G06T; telecommunication protocols H04L 29/06034)}

G06N 3/008   . .   { based on physical entities controlled by simulated intelligence so as to replicate intelligent life forms, e.g. robots replicating pets or humans in their appearance or behavior (toys or dolls A63H 3/00; industrial robot control G05B 19/00, B25J 9/00; artificial neural networks G06N 3/00; rule based artificial intelligence G06N 5/00)}

G06N 3/02   .   using neural network models (for adaptive control G05B 13/00; for image pattern matching G06K 9/00; for image data processing G06T 1/20; for phonetic pattern matching G10L 15/16)

G06N 3/04   . .   Architectures, e.g. interconnection topology

G06N 3/0409   . . .   { Adaptive Resonance Theory [ART] networks]

G06N 3/0418   . . .   {using chaos or fractal principles}

G06N 3/0427   . . .   {in combination with an expert system}

G06N 3/0436   . . .   {in combination with fuzzy logic}

G06N 3/0445   . . .   {Feedback networks, e.g. hopfield nets, associative networks}

G06N 3/0454   . . .   {using a combination of multiple neural nets}

G06N 3/0463   . . .   {Neocognitrons}

G06N 3/0472   . . .   {using probabilistic elements, e.g. p-rams, stochastic processors}

G06N 3/0481   . . .   {Non-linear activation functions, e.g. sigmoids, thresholds}

G06N 3/049   . . .   {Temporal neural nets, e.g. delay elements, oscillating neurons, pulsed inputs}

G06N 3/06   . .   Physical realisation, i.e. hardware implementation of neural networks, neurons or parts of neurons

G06N 3/061   . . .   {using biological neurons, e.g. biological neurons connected to an integrated circuit}

G06N 3/063   . . .   using electronic means

G06N 3/0635   . . . .   {using analogue means}

G06N 3/067   . . .   using optical means

G06N 3/0675   . . . .   {using electro-optical, acousto-optical or opto-electronic means}

G06N 3/08   . .   Learning methods

G06N 3/082	. . .	{modifying the architecture, e.g. adding or deleting nodes or connections, pruning}
G06N 3/084	. . .	{Back-propagation}
G06N 3/086	. . .	{using evolutionary programming, e.g. genetic algorithms}
G06N 3/088	. . .	{Non-supervised learning, e.g. competitive learning}
G06N 3/10	. .	Simulation on general purpose computers
G06N 3/105	. . .	{Shells for specifying net layout}
G06N 3/12	.	using genetic models
G06N 3/123	. .	{DNA computers, i.e. information processing using biological DNA}
G06N 3/126	. .	{Genetic algorithms, i.e. information processing using digital simulations of the genetic system}

G06N 5/00 **Computer systems utilising knowledge based models**

G06N 5/003	.	{ Dynamic search techniques, heuristics, branch-and-bound (**G06F 9/44L3B**, G06N 5/046 take precedence; for optimisation **G06Q 10/00B**; for game playing **G06F 19/00B**)}
G06N 5/006	. .	{Automatic theorem proving}
G06N 5/02	.	Knowledge representation {(G06N 5/04 takes precedence)}
G06N 5/022	. .	{Knowledge engineering, knowledge acquisition}
G06N 5/025	. . .	{Extracting rules from data (learning in general G06F 15/18)}
G06N 5/027	. .	{Frames}
G06N 5/04	.	Inference methods or devices
G06N 5/041	. .	{Abduction}
G06N 5/042	. .	{Backward inferencing}
G06N 5/043	. .	{Distributed expert systems, blackboards}
G06N 5/045	. .	{Explanation of inference steps}
G06N 5/046	. .	{Forward inferencing, production systems}
G06N 5/047	. . .	{Pattern matching networks, RETE}
G06N 5/048	. .	{Fuzzy inferencing}

G06N 7/00 **Computer systems based on specific mathematical models**

G06N 7/005	.	{Probabilistic networks}
G06N 7/02	.	using fuzzy logic (G06N 3/00, G06N 5/00 take precedence; for adaptive control G05B 13/00)
G06N 7/023	. .	{Learning or tuning the parameters of a fuzzy system}
G06N 7/026	. .	{Development tools for entering the parameters of a fuzzy system}
G06N 7/04	. .	Physical realisation
G06N 7/043	. . .	{Analogue or partially analogue implementation}
G06N 7/046	. . .	{Implementation by means of a neural network (neural networks using fuzzy

logic G06N 3/0436)}

G06N 7/06   . .   Simulation on general purpose computers

G06N 7/08   .   using chaos models or non-linear system models

G06N 99/00   **Subject matter not provided for in other groups of this subclass**

G06N 99/002   .   { Quantum computers, i.e. information processing by using quantum superposition, coherence, decoherence, entanglement, nonlocality, teleportation}

G06N 99/005   .   { Learning machines, i.e. computer in which a programme is changed according to experience gained by the machine itself during a complete run (neural networks G06N 3/02; knowledge based models G06N5; fuzzy logic systems G06N 7/02; adaptive control systems G05B 13/00)}

G06N 99/007   .   { Molecular computers, i.e. using inorganic molecules (using biomolecules G06N 3/002)}